

**Fast and Focused Search Results**  
**Application 10/711271**

**File 348:EUROPEAN PATENTS 1978-201024**

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**File 349:PCT FULLTEXT 1979-2010/UB=20100617|UT=20100610**

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**File 148:Gale Group Trade & Industry DB 1976-2010/Jun 22**

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**File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec**

**(c) 2006 The Thomson Corp**

**File 7:Social SciSearch(R) 1972-2010/Jun W2**

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Set	Items	Description
S1	2702036	(INVENTORY OR INVENTORIES OR SUPPL???())CHAIN? OR BULK()TRANSFER OR GOODS OR LOGISTIC? OR MANUFACTUR? OR WAREHOUSE?) (4N) (MANAG? OR OPTIMI? OR LIMIT? OR OPERATION? OR SCHEDUL? OR EFFICIEN?)
S2	2282	MANUFACTURING (2W) LIMITATION?
S3	175151	(ANALYSIS OR BUCKET) (2W) (POINT? ? OR DATE? ? OR TIME? ?)
S4	62001	(POLICY OR ADVANCE? OR EARLY OR AHEAD OR EFFICIEN?) (3N) (INVENTORY OR INVENTORIES )
S5	662027	(TRAPPED OR DELAY? OR POLICY OR EXCESS OR DISCRETIONARY OR ADVANCE? ? OR PLANNED OR EARLY OR AHEAD OR SWIFT OR FAST OR EFFICIENT OR CONSUMED OR CONSUMPTION? OR IMPACT? ? OR EFFECT? ?) (3N) (INVENTORY OR INVENTORIES OR STOCKS OR IN() STOCK OR SUPPLY OR GOODS OR BULK() TRANSFER OR WAREHOUSE?)
S6	17050055	(CALCULAT? OR CRUNCH? OR ALGORITHM OR FORMULA? OR MINUS OR LET(3W) (EQUAL OR REPRESENT?) OR SUBTRACT? OR ADDED() TO OR GREATER() OF OR (MATHEMATIC? OR ARITHMETIC OR LINEAR) (10N) (FUNCTION? ? OR MAXIMUM OR MAXIMA OR DETERMIN?))

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S7      14354      (AP(3W)P) OR (MAX(3W) (APT OR APOT)) OR
(P(4N)P(4N)AP???)
S8      1930513     ALGORITHMS
S9      17861748     S8 OR S6
S10     341482      S9 AND S1
S11      8          S7 AND S4
S12     26          S7(S)S6
S13     22          S12 NOT S11
S14     17          S13 FROM 348,349,347,350
S15      5          S13 NOT S14
S16      5          RD  (unique items)
S17      4          S16 NOT PY>2004
S18     17          IDPAT S14 (sorted in duplicate/non-duplicate order)
S19     16          IDPAT S14 (primary/non-duplicate records only)
S20      2          S4 AND S3 AND S5 AND S2

```

11/3,K/8 (Item 3 from file: 148)  
DIALOG(R)File 148: Gale Group Trade & Industry DB  
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13789701    **Supplier Number:** 77674881 (USE FORMAT 7 OR 9 FOR FULL TEXT )  
**Minimax analysis for finite-horizon inventory models.**

GALLEGO, GUILLERMO; RYAN, JENNIFER K.; SIMCHI-LEVI, DAVID  
IIE Transactions , 33 , 10 , 861  
Oct , 2001  
ISSN: 0740-817X

**Language:** English

**Record Type:** Fulltext

**Word Count:** 11209    **Line Count:** 00990

...models with discrete distributions that are incompletely specified by selected moments, percentiles, or a combination of moments and percentiles. The objective is to determine an **inventory policy** that minimizes the maximum expected cost over the class of demand distributions satisfying the specifications described above. We show that many inventory models of this...

...where the demand distribution is unknown except for a finite number of parameters, such as its mean and variance. The problem is to determine an **inventory policy** that minimizes the maximum expected cost over all demand distributions with the given parameters. We make no further assumptions on the form of the demand...

...demand distribution. This flexibility is the major contribution of our approach.

In Section 2 we present a general formulation for the problem of determining the **inventory policy** that minimizes the maximum expected cost over all distributions satisfying a variety of linear constraints. Section 3 demonstrates the applicability of our model in several...

...our approach.

## 2. General formulation

In this section we present a general formulation for the single period minimax problem. The objective is to determine an **inventory policy** to ...sub.j))),  $j=1, \dots, n$ , is not completely specified, and belongs to the feasible set  $P = \{p = (((p.\text{sup}.j)).\text{sup}.n).\text{sub}.j=1): Ap = b, p \text{ (greater than or equal to) } 0\}$ , where  $A$  is an  $1 \times n$  matrix and  $b$  is an 1-dimensional column vector, where 1 (less...

...as part of the objective function and allows us to solve a single linear

program to find both the worst case distribution and the optimal **inventory policy**. The optimal **inventory** level is the dual variable associated with the constraint

$$-((\sigma)_{\text{sub.1}}(\epsilon)L) (f'_{\text{sub.1}}(p_{\text{sub.1}})) \text{ (less than or equal to } \dots d(y),$$

is also a convex function of  $y$ , where  $(z_{\text{sub.d}})(y)$  is as defined in Section 3.2.

To determine the optimal **inventory policy** for this problem, let  $S((y_{\text{sub.0}}))$  be the least minimizer of  $G(y; (y_{\text{sub.0}}))$ . Then, since  $-G(y; (y_{\text{sub.0}} \dots \text{more demand data is observed and a better estimate of the demand distribution can be developed. Therefore, we consider the problem of determining an optimal **inventory policy** for a multi-period model in which we incorporate observed demand data into the worst case analysis in order to improve our estimate of the...$

$\dots m$ -period problem with set-up cost. Given an initial inventory and a discount rate  $\theta$  ( $\epsilon$ ) ( $0, 1$ ), the problem is to find an **inventory policy** that minimizes the maximum  $(\theta)$ -discounted  $m$ -period expected cost against the worst possible sequence of probability mass functions of demand over the  $m$  periods, where in each period the probability mass function is in the set  $P = \{p : Ap = b, p \text{ (greater than or equal to) } 0\}$ , where  $A$  is an  $l \times n$  matrix and  $b$  is an  $l$ -dimensional column vector.

When analyzing a...  
 $\dots$  then the non-stationary model may be more appropriate.  
 Finally, note that the non-stationary model obviously provides a conservative policy. That is, given an **inventory policy**, the worst case expected cost for the stationary problem will be less than or equal to the worst case expected cost of the non-stationary  $\dots y_{\text{sub.k}})$  (right arrow) ( $\infty$ ) as  $\backslash(y_{\text{sub.k}}) \backslash$  (right arrow) ( $\infty$ ).

The lemma thus implies that (Scarf, 1960):  
 Corollary 4.2. The optimal **inventory policy** solving Equation (6) is an  $((s_{\text{sub.k}}, (S_{\text{sub.k}}))$  policy for all  $k = 1, 2, \dots, m$ .  
 4.1. Solving the dynamic programming equations... planning horizon is convex in  $y$  for each period  $k$ ; therefore, a critical number policy will be optimal in each period. That is, the optimal **inventory policy** in period- $k$  is to order-up-to  $(S_{\text{sub.k}})$  if  $(Y_{\text{sub.k}})$  (less than)  $(S_{\text{sub.k}})$ , otherwise do not order. The...

$\dots$  An alternative approach that has frequently been suggested, and is commonly used in practice, is to assume that demand is normally distributed and use an **inventory policy** that is optimal under that assumption.

To examine the robustness of the minimax approach we performed a computational study of the single period newsvendor model...

...the distribution.

Given the estimates of the mean, (micro), and variance of demand,  $((\sigma)^{\text{sup.2}})$ , obtained from the observed data, the retailer determines

an **inventory policy** in one of two ways. He may assume that demand is normally distributed and use a policy that is optimal under that

assumption, or he...possible demand points,  $(D.\text{sub.1}) \dots, (D.\text{sub.n})$  We chose  $= (D.\text{sub.i}) = i$ , for  $i = 0, \dots, 100$ .

Step 5. We computed the optimal **inventory policy**,  $(y.\text{sup.*})$ , based on the true demand distribution and the true mean and variance.

Step 6. We computed the expected single period cost for each...

...difference between the expected costs for the optimal policy, which is determined using complete knowledge of the demand distribution, and the expected costs for an **inventory policy** which is determined using only limited knowledge regarding the demand distribution, in this case (micro) and  $((\sigma)^{\text{sup.2}})$ . In other words, we calculate the...than or equal to) 0.9.

Finally, it is appropriate to point out that if the mean and variance of demand are known exactly, the **inventory policy** based on the normal distribution performs quite well. This is true for a variety of demand distributions, particularly those that are not dramatically skewed.

6...

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11/3,K/6 (Item 1 from file: 148)  
DIALOG(R)File 148: Gale Group Trade & Industry DB  
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0019474262 **Supplier Number:** 143724613 (USE FORMAT 7 OR 9 FOR FULL TEXT)

**A heuristic for multi-item production with seasonal demand.**

Ketzenberg, Michael; Metters, Richard; Semple, John

IIE Transactions , 38 , 3 , 201(11)

March , 2006

ISSN: 0740-817X

**Language:** English

**Record Type:** Fulltext; Abstract

**Word Count:** 8985 **Line Count:** 00805

...scheduling for seasonal demand. International Journal of Operations and

Production Management, 13(7), 4-21.

DeCroix, G. and Arreola-Risa, A. (1998) Optimal production and

**inventory policy** for multiple products under resource constraints. Management Science, 44(7), 950-961.

Evans, R. (1967) Inventory control of a multiproduct system with a limited production...

...1. Detailed description of procedure ALLOCATE

Additional notation useful for this procedure includes:

(L.sub.t) = list of products to produce in period t; and

**AP(p)** = additional profit for the marginal unit of product p.

The input parameters are t (the time period in question), (S.sub.tp.sup.(infinity)) ((for...

...R.sub.t) > 0 {While there is capacity to be allocated, continue the procedure.}

Step AL4. For all p (member of) (L.sub.t), calculate **AP(p)** = (v.sub.p) + ((pi).sub.p) - (c.sub.p) - ((h.sub.p) + (v.sub.p) + ((pi).sub.p)) ((PHI).sub.tp) ((S.sub.tp) + 1) {Find the expected "Additional Profit" (AP) of an extra unit of each product.}

Step AL5. (p.sub.max) = Arg (max.sub.p(member of) (L.sub.t)) (**AP(p)**) {Find the product with the highest expected marginal profit.}

Step AL6. (S.sub.tp.sub.max) = (S.sub.tp.sub.max) + 1 {Produce an extra...

...profit (identified by (p.sub.max) in Step AL5), until the current period's resources ((R.sub.t)) are exhausted (Step AL3).

The value of **AP(p)** (Step AL4) is the expected revenue minus the expected cost of a marginal increase in inventory of product p in

the single time period under...be used to approximate the marginal profits

in period j (Step AN14). Products whose additional accrued storage costs

AC(p) exceed their additional future profits **AP(p)** are

eliminated from the list of products (L.sub.t\*) to store at present (the

list management step, Step AN15). If it is cost effective...

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11/3,K/5 (Item 1 from file: 15)

DIALOG(R)File 15: ABI/Inform(R)

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02325201

86065901

**Re-engineering the acquisition and payment process - get the most from your integrated system software**

Walker, Kenton B

**Text:**

...of information technology to facilitate process management and the 3Es

is in the acquisition and payment process. This process includes the activities within accounts payable (**AP**), purchasing (**P**), and inventory management (IM), each a sub-process of the acquisition and payment process. A diagram of this collection of activities is shown in Figure...

...investment.

A process includes the total flow of information across organizational boundaries. In the past, only separate information systems were available

to support activities within **AP**, **P**, and IM. These piecemeal systems bridge manufacturing, finance, purchasing, and engineering to provide basic information about committed expenditures, inventory cost and expense, and basic manufacturing...

...providing their customers with the analyses and input they need. Major deliverables of an integrated system

Table I outlines basic steps for implementing an integrated **AP/P/IM** system.

Traditionally, data from **AP**, **P**, and IM is transferred to the general ledger and becomes part of the overall financial reporting of the

company. However, integrating these systems allows for more than just transaction processing. The basic master files created to support **AP/P/IM** activities also are important to other systems such as plant maintenance, manufacturing MRP, freight, hazardous materials, project materials, marketing materials, and other similar systems. Following are

major deliverables by sub-process for a project to implement an integrated

**AP/P/IM** system.

Accounts payable

Table II outlines key activities in AP that management should evaluate for

improvement when a new system is being implemented. Integrated...IM activities for improvement when implementing an integrated system. Some of

these IM activities are listed in Table IV.

Three important deliverables of an integrated **AP/P/IM** system are expanded usage of EDI, the ability to track materials throughout the



system, and more accurate inventory valuation. The inventory master file is ...transaction errors. New systems maintain accurate balances reducing the likelihood of write-offs.

Critical success factors for the acquisition and payment process system implementation

The **AP/P/IM** systems are primarily transaction-based systems. They must always be in balance to provide the following: 1) accurate and current cash information, 2) information...

...for users, 4) record and report expenditures throughout the organization, 5) documentation of buyer and supplier performance, and 6) accurate and current inventory position.

Integrated **AP/P/IM** systems provide real-time, accurate transactions and support the 3Es. If users can access the information on-line, department managers can make effective decisions...

...strategies to support business process objectives. Following are a number of critical success factors that will ensure management and users are satisfied with their integrated **AP/P/IM** system. These critical success factors are designed to reinforce the benefits and opportunities of a good acquisition and payment process. Provide system integration

True...

...levels can be analyzed at system implementation and at selected periods of time thereafter. Inventory reductions improve cash position plus eliminate any overhead attached to **inventory** carrying costs.

Improve **efficiency** of transactions

Much of the **AP/P/IM** systems are transaction oriented. Many existing systems do not have on-line edits or batch edits, allowing invalid transactions to be processed. The errors...customers). Information is a source of competitive advantage as are the systems that are used to provide the information.

Caption: Figure 1; Overview of the **AP/P/IM** system; Table I; Steps for implementing an integrated **AP/P/IM** system; Table II; Key activities to be evaluated for improving accounts payable; Table III; Key activities to be evaluated for improving purchasing; Table IV...

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11/3K/4 (Item 4 from file: 349)  
DIALOG(R)File 349: PCT FULLTEXT  
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01012862

**INVENTORY EARLY WARNING AGENT**  
AGENT D'INVENTAIRE A ALERTE RAPIDE DANS UN SYSTEME DE GESTION  
DE CHAINE D'APPROVISIONNEMENT  
**INVENTORY EARLY WARNING AGENT**

**Patent Applicant/Patent Assignee:**

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Intellectual Property Department, Neurottstr. 16, 69190 Walldorf; DE;  
DE(Residence); DE(Nationality); (For all designated states except: US)

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DE(Nationality); (Designated only for: US)
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**Legal Representative:**

- **MOLLBORN Fredrik (agent)**  
Fish & Richardson P.C., 500 Arguello Street #500, Redwood City, CA 94063; US

	Country	Number	Kind	Date
Patent	WO	200342791	A2-A3	20030522
Application	WO	2002US36704		20021114
Priorities	US	2001336227		20011114
	US	2002384638		20020531
	US	2002208180		20020731

**Designated States:** (Protection type is "Patent" unless otherwise stated - for applications prior to 2004)

AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG,  
BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ,  
DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD,  
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,  
KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,  
LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,  
NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD,  
SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT,  
TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW

[EP] AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES;  
FI; FR; GB; GR; IE; IT; LU; MC; NL; PT;  
SE; SK; TR;

[OA] BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW;  
ML; MR; NE; SN; TD; TG;

[AP] GH; GM; KE; LS; MW; MZ; SD; SL; SZ; TZ;  
UG; ZM; ZW;

[EA] AM; AZ; BY; KG; KZ; MD; RU; TJ; TM;

**Language** Publication Language: English

Filing Language: English

Fulltext word count: 9798

### **Detailed Description:**

#### INVENTORY EARLY WARNING AGENT IN A SUPPLY CHAIN MANAGEMENT SYSTEM BACKGROUND

This invention relates to agents, and more particularly to an inventory early warning agent used in a supply chain management system. Today's companies need to adapt to many competitive pressures. For example, financial markets are increasingly ...of the invention will be apparent from the description, the drawings, and the claims.

#### DESCRIPTION OF DRAWINGS

Fig. 1 is a plan view of an **inventory early** warning agent application to a shelf level monitoring system.

Fig. 2 is a plan view of an agent framework architecture that includes three agents.

Fig...a particular SKU for potential stock out situations and sending alerts when various thresholds are reached. For example, an agent can be programmed as an **inventory early** warning agent ("IEWA") that monitors one or more

inventories in ...that is indicative of the type of interactions that occur within the agent community 245. For example, the agent 205a can be implemented as an **inventory early** warning agent that is used to monitor the level of inventory on a shelf or within a store or a warehouse, process the inventory information... model that can be used is a probabilistic inference model based on a conditional Gaussian approximation. This model, its derivation, and its application to the **inventory early** warning agent are explained in more detail ...fn

P T and the parameters of the Gaussian are

C-IW

P P

P+(AP )T C

,W

I P P

)T C

It + (AP

1W

L P P PJ

and

C

-C-1AP -CAP

P P I P P

(AP )T C-1 1-1 + (AP )T CAP ... (AP )T CAP

1 P I P I I P P

-(AP) T C - (AP )T CAP + ( AP )T CAP

P P P P 1 P P P

Y.` can be inverted using the identity that if

1 8

T T

VXT VIV2 ... V1Vp

T T

A...E-= [2@ ... @p]

P I P

where C-1/2 is the Cholesky decomposition of C-1 to find

P

C +APM(AP )T +---+APY.(AP )T APY.-APY.

P I 1 P P I P

I (AP )T YW ... 0

I

)T

F (AP 0 ... L

P

and, by multiplying, the mean is found to be.

T+---+API(AP )T) C

IW

$w + (\mathbf{A}^T \mathbf{p} + \mathbf{A}^T \mathbf{p}) + (\mathbf{A}^T \mathbf{p} + \mathbf{A}^T \mathbf{p})$   
 $\mathbf{P}^T \mathbf{P} \mathbf{P}^T \mathbf{P} \mathbf{P}^T \mathbf{P}$

It

Ft

P

As noted above,  $P(f, -, -, -, f, -P)$  was simplified to the form  $11 P(f, @-j \dots)$  are given

$P^T \mathbf{P} \mathbf{P}^T \mathbf{P} \mathbf{P}^T \mathbf{P}$

by

0

$F - C - \pi/2$  0

$)T C / 2 \ 7 \ YP-1$

$C-1/2 \ )V$

$VP = [(\mathbf{A}^T \mathbf{p} + \mathbf{A}^T \mathbf{p})]$

$\mathbf{P}^T \mathbf{P} \mathbf{P}^T \mathbf{P} \mathbf{P}^T \mathbf{P}$

$P^T C - 1/2$

$(\mathbf{A}^T \mathbf{p} - \mathbf{P} - 1 \ c - 1/2$

$L - o \ J$

and  $\mathbf{A}^T \mathbf{p}$  is the  $q \times pq$  matrix given by  $\mathbf{A}^T \mathbf{p} \mathbf{A}^T \mathbf{p} \mathbf{A}^T \mathbf{p} \dots \mathbf{A}^T \mathbf{p}$ . Given this particular form

$1 \ 2 \ \mathbf{P}$

for the precision matrix, its Cholesky decomposition can immediately be written down as

$-c-1/2 \ 0 \dots 0$

$\mathbf{P}$

$Tc-1/2 \ -c-1/2$

$(\mathbf{A}^T \mathbf{p}) \dots 0$

$1 \ \mathbf{P} \ \mathbf{P}^T \mathbf{P}$

$(\mathbf{A}^T \mathbf{p})^T C$

$1/2 \ (\mathbf{A}^T \mathbf{p})^T T C - 1/2 \ -c-1/2$

$\mathbf{P} \ \mathbf{P} \ \mathbf{P}^T \mathbf{P} \ 0$

In this form the inverse...

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11/3K/2 (Item 2 from file: 349)

DIALOG(R)File 349: PCT FULLTEXT

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01012864

**AGENT USING DETAILED PREDICTIVE MODEL**

AGENT UTILISANT UN MODELE PREDICTIF DETAILLE

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DE(Residence); DE(Nationality); (For all designated states except: US)

**Patent Applicant/Inventor:**

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DE(Nationality); (Designated only for: US)

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US(Nationality); (Designated only for: US)

**Legal Representative:**

- **MOLLBORN Fredrik (agent)**

Fish & Richardson P.C., 500 Arguello Street #500, Redwood City, CA 94063; US

	Country	Number	Kind	Date
Patent	WO	200342793	A2-A3	20030522
Application	WO	2002US36813		20021114
Priorities	US	2001336227		20011114
	US	2002384638		20020531
	US	2002208186		20020731
	US	2002281074		20021024

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AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG,  
BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ,  
DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD,  
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,  
KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,  
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SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT,  
TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW

[EP] AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES;  
FI; FR; GB; GR; IE; IT; LU; MC; NL; PT;  
SE; SK; TR;

[OA] BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW;

ML; MR; NE; SN; TD; TG;

[AP] GH; GM; KE; LS; MW; MZ; SD; SL; SZ; TZ;  
UG; ZM; ZW;

[EA] AM; AZ; BY; KG; KZ; MD; RU; TJ; TM;

**Language** Publication Language: English

Filing Language: English

Fulltext word count: 19319

### Detailed Description:

...of the invention will become apparent from the description, the drawings, and the claims.

### DESCRIPTION OF DRAWINGS

FIG. 1 is a plan view of an **inventory early** warning agent application to a shelf level monitoring system.

FIG. 2 is a plan view of an agent framework architecture that includes three agents.

FIG...Keeping Unit (SKU) for potential stock out situations and sending alerts when various thresholds are reached. For example, an agent can be programmed as an **inventory early** warning agent ("IEWA") that monitors one or more inventories in a factory, warehouse, store, or shelf within a store. The IEWA is programmed to monitor...that is indicative of the type of interactions that occur within the agent community 245. For example, the agent 205a can be implemented as an **inventory early** warning agent that is used to monitor the level of inventory on a shelf or within a store or a warehouse, process the inventory information...model that can be used is a probabilistic inference model based on a conditional Gaussian approximation. This model, its derivation, and its application to the **inventory early** warning agent are explained in more detail below.

To derive the model used for explanation purposes, there is an assumption of a known, planned forecast...2

T

where [fn fn-I ... fil-P and the parameters of the Gaussian are

C-1w

P P

y-I I TC-IW

A + (AP P P

T C-I

+ (AP PWP

P

and

18

$C^{-1} - C^{-1} \mathbf{A} \mathbf{P} \dots - C$

$\mathbf{A} \mathbf{P}$

$\mathbf{P} \mathbf{P} \mathbf{I} \mathbf{P} \mathbf{P}$

$-(\mathbf{A} \mathbf{P})^T \mathbf{C}$

,  $\mathbf{I}' + (\mathbf{A} \mathbf{P})^T \mathbf{C} \mathbf{A} \mathbf{P} \dots (\mathbf{A} \mathbf{P})^T \mathbf{C}^{-1} \mathbf{A} \mathbf{P}$

$\mathbf{I} \mathbf{P} \mathbf{I} \mathbf{P} \mathbf{I} \mathbf{P} \mathbf{P}$

$-(\mathbf{A} \mathbf{P})^T \mathbf{C}$

,  $-(\mathbf{A} \mathbf{P})^T \mathbf{C} \mathbf{A} \mathbf{P} \dots \mathbf{L}' + (\mathbf{A} \mathbf{P})^T \mathbf{C} \mathbf{A} \mathbf{P}$

$\mathbf{P} \mathbf{P} \mathbf{P} \mathbf{P} \mathbf{I} \mathbf{P} \mathbf{P} \mathbf{P}$

can be inverted using the identity that if

$\mathbf{T}^T$

$\mathbf{V} \mathbf{I} \mathbf{V}^T \mathbf{V}_1 \mathbf{V}_2 \dots \mathbf{V}_p$

$\mathbf{A} \mathbf{V}_2 \mathbf{V}_1^T \mathbf{B} + \mathbf{V}_2 \mathbf{V}_2^T \dots \mathbf{V}_2 \mathbf{V}_p^T$

$\mathbf{T}^T \mathbf{A} \mathbf{P} \mathbf{E} (\mathbf{A} \mathbf{P})^T \mathbf{A} \mathbf{P} \mathbf{E} \mathbf{A} \mathbf{P} \mathbf{E}$

$\mathbf{P} \mathbf{I} \mathbf{I}) \mathbf{P} \mathbf{P} \mathbf{I} \mathbf{P}$

$\mathbf{L} (\mathbf{A} \mathbf{P})^T \mathbf{0}$

$)^T$

$(\mathbf{A} \mathbf{P} \mathbf{0} \dots \mathbf{I}$

$\mathbf{L} \mathbf{P}$

$\mathbf{j}$

and, by multiplying, the mean is found to be.

$\mathbf{W} + (\mathbf{A} \mathbf{P} + \dots + \mathbf{A} \mathbf{P}) \mathbf{j}^T + (\mathbf{A} \mathbf{P} \mathbf{E} (\mathbf{A} \mathbf{P})^T + \dots + \mathbf{A} \mathbf{P} \mathbf{E} \mathbf{A} \mathbf{P})^T \mathbf{C}$

$\mathbf{I} \mathbf{W}$

$\mathbf{P} \mathbf{I} \dots \mathbf{I}) \mathbf{q} \times \mathbf{q}$  matrices  $\mathbf{V}$ , are given

$\mathbf{P} \mathbf{I} \mathbf{I} \mathbf{0} \mathbf{0}$

by

$\mathbf{0}$

$-\mathbf{C}^{-1/2} \mathbf{0}$

$\mathbf{T} \mathbf{P} \mathbf{V} \mathbf{P}^{-1}$ ,

$\mathbf{C}^{-1/2} \dots$

$\mathbf{V} \mathbf{P} \mathbf{A} \mathbf{P} \mathbf{C}^{-1/2} \mathbf{P}^{-1} \mathbf{V} \mathbf{O} \mathbf{0}$

$\mathbf{P} (\mathbf{A} \mathbf{P}^{-1})^T \mathbf{c}^{-1/2} \mathbf{c}^{-1/2}$

$\mathbf{P}^{-1} \mathbf{O} \mathbf{J}$

and  $\mathbf{A} \mathbf{P}$  is the  $\mathbf{q} \times \mathbf{pq}$  matrix given... for the precision matrix, its Cholesky decomposition can immediately be written down as

$-\mathbf{c}^{-1/2} \mathbf{0} \dots \mathbf{0}$

$\mathbf{P}$

$\mathbf{T} \mathbf{c}^{-1/2} \mathbf{c}^{-1/2}$

$(\mathbf{A} \mathbf{P}) - \mathbf{P}^{-1} \dots \mathbf{0}$

$\mathbf{I} \mathbf{P}$

$\mathbf{T}^{-1/2} \mathbf{I} \mathbf{T}^{-1/2} - \mathbf{I}^{-1/2}$

$\mathbf{c}$

$\mathbf{C}$

$\mathbf{P} \mathbf{P} \mathbf{I}) \mathbf{C} \mathbf{P} \mathbf{0}$



(AP (AP  
P

In this form the inverse is easier to calculate. If an inverse of the form below is necessary.

(CI/2)T 0 ... 0  
P

c1...example, if inventory levels are too low, new sources of supply will be sought, or some demand will be cancelled or postponed. In fact, the **Inventory Early Warning Agent** is intended to enhance this process of self-correction. For this reason, it is expected that the confidence bounds of a model that..

19/3K/7 (Item 7 from file: 349)  
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01212856

**SYSTEM AND METHOD FOR IDENTIFICATION OF QUASI-FUNGIBLE  
GOODS AND SERVICES, AND FINANCIAL INSTRUMENTS BASED  
THEREON**

SYSTEME ET PROCEDE D'IDENTIFICATION DE BIENS ET DE SERVICES  
QUASI-FONGIBLES ET INSTRUMENTS FINANCIERS BASES SUR CEUX-CI

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	Country	Number	Kind	Date
Patent	WO	200520018	A2-A3	20050303
Application	WO	2004US26960		20040818
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**Designated States:** (All protection types applied unless otherwise stated - for applications 2004+)

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BR; BW; BY; BZ; CA; CH; CN; CO; CR; CU;  
CZ; DE; DK; DM; DZ; EC; EE; EG; ES; FI;  
GB; GD; GE; GH; GM; HR; HU; ID; IL; IN;

IS; JP; KE; KG; KP; KR; KZ; LC; LK; LR;  
LS; LT; LU; LV; MA; MD; MG; MK; MN; MW;  
MX; MZ; NA; NI; NO; NZ; OM; PG; PH; PL;  
PT; RO; RU; SC; SD; SE; SG; SK; SL; SY;  
TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ;  
VC; VN; YU; ZA; ZM; ZW;

[EP] AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES;  
FI; FR; GB; GR; HU; IE; IT; LU; MC; NL;  
PL; PT; RO; SE; SI; SK; TR;

[OA] BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW;  
ML; MR; NE; SN; TD; TG;

[AP] BW; GH; GM; KE; LS; MW; MZ; NA; SD; SL;  
SZ; TZ; UG; ZM; ZW;

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### Claims:

...interest rate associated with a particular quasi-fungible alternate candidate @j. Dealer 1402 buys parts in the cash market at the Value of the Trade +/- **AP** where **AP**= **P**(T) - **P**(to) with T being Time Terminus and to being the start time of the trade. Dealer 1402 pays to or (receives from) the Device Manufacturer... ...with T being Time Terminus and to being the start time since the forward is cash settled to the index. A different payoff would be **formulated** for a forward settling to delivery of its constituent index components. Device Manufacturer 1406 receives from (pays to) Dealer 1402 the Notional Value of the... ...to), with T being Time Terminus and to being the start time since the forward was cash settled to the index. A different payoff would **formulated** for a forward settling to delivery of its constituent index components. Device Manufacturer 1406 pays contract price PI for procurement commitment or pays market price...

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01482280

**ENERGY AND CHEMICAL SPECIES UTILITY MANAGEMENT SYSTEM**  
**SYSTEME DE GESTION DE SERVICES, D'ESPECES CHIMIQUES ET D'ENERGIE**

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BR; BW; BY; BZ; CA; CH; CN; CO; CR; CU;  
CZ; DE; DK; DM; DZ; EC; EE; EG; ES; FI;  
GB; GD; GE; GH; GM; HN; HR; HU; ID; IL;  
IN; IS; JP; KE; KG; KM; KN; KP; KR; KZ;  
LA; LC; LK; LR; LS; LT; LU; LV; LY; MA;  
MD; MG; MK; MN; MW; MX; MY; MZ; NA; NG;  
NI; NO; NZ; OM; PG; PH; PL; PT; RO; RS;  
RU; SC; SD; SE; SG; SK; SL; SM; SV; SY;

TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ;  
VC; VN; ZA; ZM; ZW;

[EP] AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES;  
FI; FR; GB; GR; HU; IE; IS; IT; LT; LU;  
LV; MC; NL; PL; PT; RO; SE; SI; SK; TR;

[OA] BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW;  
ML; MR; NE; SN; TD; TG;

[AP] BW; GH; GM; KE; LS; MW; MZ; NA; SD; SL;  
SZ; TZ; UG; ZM; ZW;

[EA] AM; AZ; BY; KG; KZ; MD; RU; TJ; TM;

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### Detailed Description:

...in an integrated way here.

1st Tier-PE Advisor (process) (PE-A) focused on optimizing E/U operation at a plant site (optimal E/U **supply** to plant units; **consumption** reduction at units) 1st Tier-PE Advisor (power and facilities) focused on optimizing power & utility generation (E/U generation at minimum cost; internal consumption reduction...opportunities offered by energy management which focuses on consumption as well as price. The benefits only begin with reduced energy bills.

TOTAL ENERGY USE in **MANUFACTURING** AND MINING (U.S. Department of Energy) Trillion Btu

Top Ten 700\*-600\*-500\* 400\*. Entgy Delivered U

Feedstock Energy Input 2000. 100... ...average, this means every kilowatt hour of power generated by a utility requires three kilowatt hour equivalents of fuel. Including external losses in the loss **analysis** provides a total picture of the energy associated with an individual industry's use of electricity. When viewed in this context, "off-site losses account...energy/utility infrastructure, and operations; and spend; \* Optimize energy/utility systems operations resulting in a targeted savings of 5% of purchased energy; \* Perform "what if" **analysis** on a historical, near-real-time and predictive basis; \* Proactively manage energy supply contracts and exports (grid/general market or cogeneration); \* Monitor, track and manage...however, allows for integration of these disparate information buckets into a single coherent system for optimization. Manufacturers are thus slowly embracing the role of **advanced** Information Technology (IT) to more efficiently optimize behavioral approaches to energy management that

combine technical and business decisions on how energy is used, and sourced...  
...business processes impacting their business objectives, so operational decisions can be taken. Our bottom line is that generators must plan for increased investments in real-time analytics and decision support systems to maximize economic value." (META Group Inc.) It is apparent that the process and power industries, especially in North America **consumption**.

8/23/05 PE-Advisor Energy and Utility Management software Page 1 of 2 Jf QppQi+/-  
qfljS 1.li-uGHmloaEiEsouCEs PA' Ws or nergy improvement projects...takes care of RES embodied knowledge, targets, client service goals and general market experience as well as process operation, integration and optimization experience. The full **inventory** of these factors needs to be established. Typical aspects are: \* What does RES see as included In IEM? \* How far does RES want to automate... ...tool for use by industrial facilities and Systems? their energy providers. The software is applied in a total-site integrated-systems approach wherein both the **supply** and demand sides of energy and utility systems are addressed. Typical utility systems included are fuel, steam, power, water and hydrogen systems.

Use, Validate, Data... VBA-add-in compatible to these.

Instruments and controls Help in pointing out field positions of instruments Reviews as required by project manager Software configuration **Supply** of required tag list for inclusion in the historian 08/25/05 Page 8 of 11 Confidential Lg14 Re uce, LLC response to Evaluation of Energy...

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